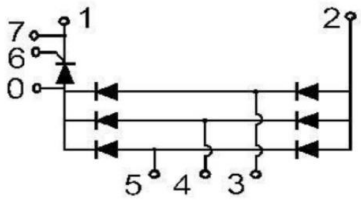
MTS.SCR75.16

Power bridge rectifier + thyristor

Features:

- Three phase bridge and a thyristor
- Isolated module package
- Glass passivated chip
- Simple mounting
- UL recognized, file no. E312789



Typical applications:

- Inverter for AC or DC motor control
- Current stabilized power supply
- Switching power suplly

Symbol	Characteristcs	Test Conditions	Value			Unit
			Min	Typ	Max	
♦ DIODE						
$V_{RSM/DSM}$	Non-repetitive reverse/forward blocking voltage	Tj = 25°C			1700	V
$V_{RRM/DRM}$	Repetitive reverse/forward blocking voltage	Tj = 25°C			1600	V
I_D	Output current DC	Three phase, full wave, T_c = 100°C			75	A
I_{FSM}	Surge forward current	10ms half sine wave, Tj = 45°C			750	A
I^2t	I^2t for fusing coordination	10ms half sine wave, Tj = 45°C			2810	A^2s
V_{FO}	Threshold voltage	Tj = 150°C			0.90	V
r_T	On-state slope resistance	Tj = 150°C			2.00	mΩ
V_{FM}	Peak forward voltage	T=25°C ; I_F=75A			1.30	V
I_{RD}	Repetitive peak reverse current	Tj = 25°C, $V_{RD} = V_{RRM}$			0.10	mA
		Tj = 150°C, $V_{RD} = V_{RRM}$			6	mA
$R_{th(j-c)}$	Thermal resistance junction to case				0.25	°C/W
$R_{th(c-s)}$	Thermal resistance case to sink				0.10	°C/W
V_{ISO}	Isolation voltage	50Hz, RMS, t = 1min		3000		V
T_j	Operating Temperature		-40		150	°C
T_{stg}	Storage Temperature		-40		150	°C
F_M	Mounting torque - to heatsink (M6)		4		6	N·m
	Mounting torque - to terminal (M5)		2.5		3.5	N·m
W_t	Weight			210		g
Outline	M56B					

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Symbol	Characteristcs	Test Conditions	Value			Unit
			Min	Typ	Max	
♦ THYRISTOR						
$V_{RSM/DSM}$	Non-repetitive reverse/forward blocking voltage	Tj = 25°C			1700	V
$V_{RRM/DRM}$	Repetitive reverse/forward blocking voltage	Tj = 25°C			1600	V
$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz T_c = 85 °C			75	A
I_{TSM}	Surge non repetitive current	10ms half sine wave Tj = 45°C, V_R = 0			920	A
I_{RRM} I_{DRM}	Repetitive peak current	at V_{DRM}/V_{RRM} Tj = 150°C			20	mA
I^2t	I^2t for fusing coordination	10ms half sine wave Tj = 45°C, V_R = 0			4230	A^2s
V_{TO}	Threshold voltage	Tj = 150°C			0.90	V
r_T	On-state slope resistance	Tj = 150°C			2.00	mΩ
V_{TM}	Peak on-state voltage	T=25°C, I_T=75A			1.50	V
di/dt	Critical rate of rise of off-state current	Tj = 150°C, V_D = 1/2 V_{DRM}, I_G = 100mA, di_G/dt = 0.1A/µs			150	A/µs
dv/dt	Critical rate of rise of off-state voltage	Tj = 150°C, V_D = 2/3 V_{DRM}, linear voltage rise			500	V/µs
$R_{th(j-c)}$	Thermal resistance junction to case				0.40	°C/W
$R_{th(c-s)}$	Thermal resistance case to sink				0.10	°C/W
I_{GT}	Gate trigger current	V_D = 6V, 'Tj = 25 °C			150	mA
V_{GT}	Gate trigger voltage				3	V
I_{GD}	Gate trigger current	V_D = 2/3 V_{DRM}, 'Tj = 125 °C			6	mA
V_{GD}	Gate trigger voltage				0.25	V
I_H	Holding current	Tj = 25°C, V_D = 6V		150	250	mA
I_L	Latching current	Tj = 25°C, R_G=33Ω		300	600	mA
t_{gd}	Gate controlled delay time	Tj = 25°C		1		µs
t_q	Circuit commutated turn-off time	Tj = 150°C		100		µs

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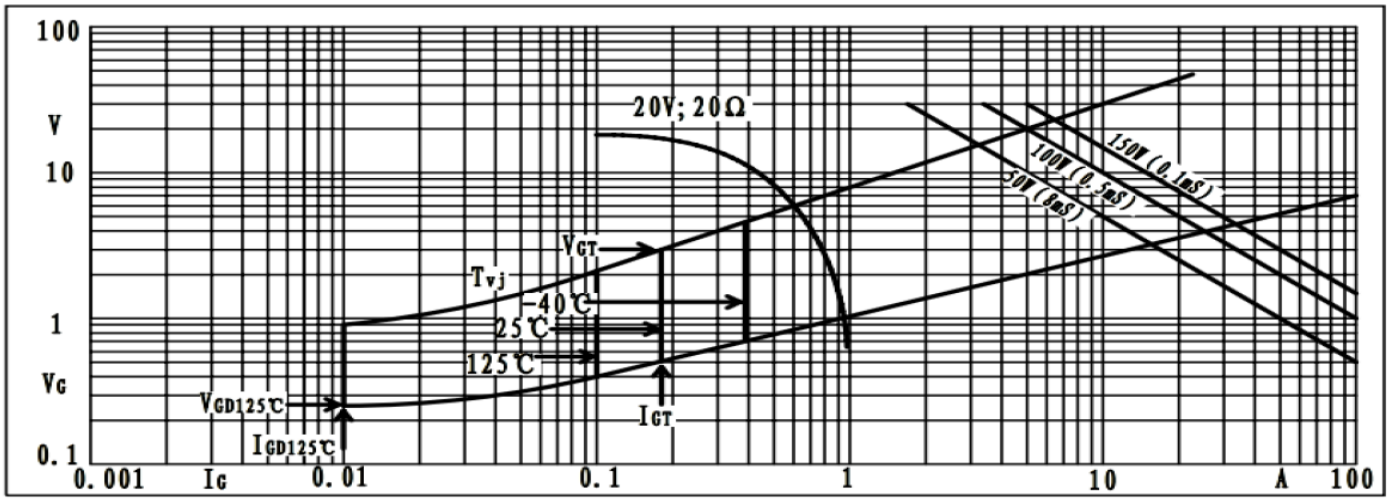

Fig1. Gate trigger characteristics

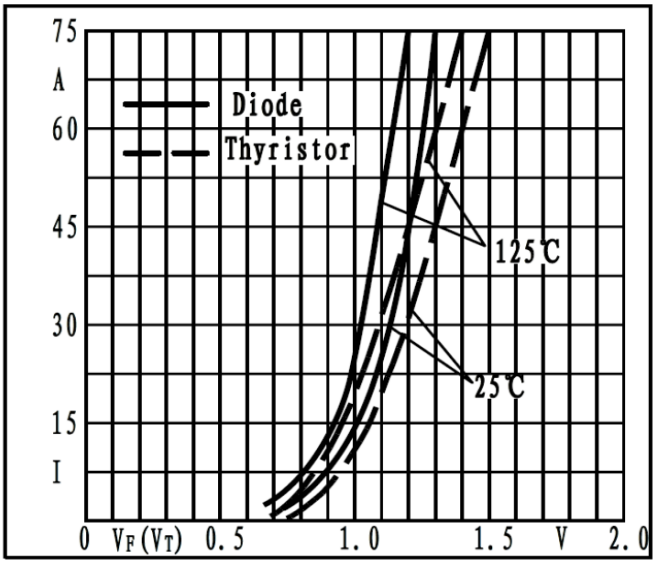

Fig2. Forward characteristics

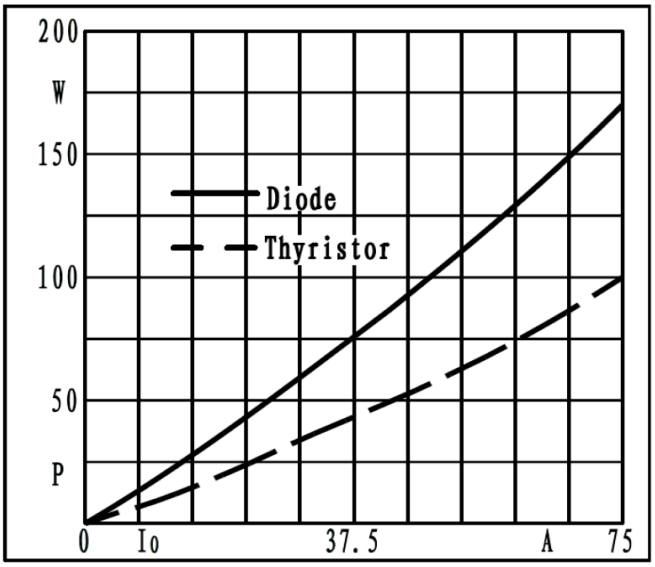

Fig3. Power dissipation

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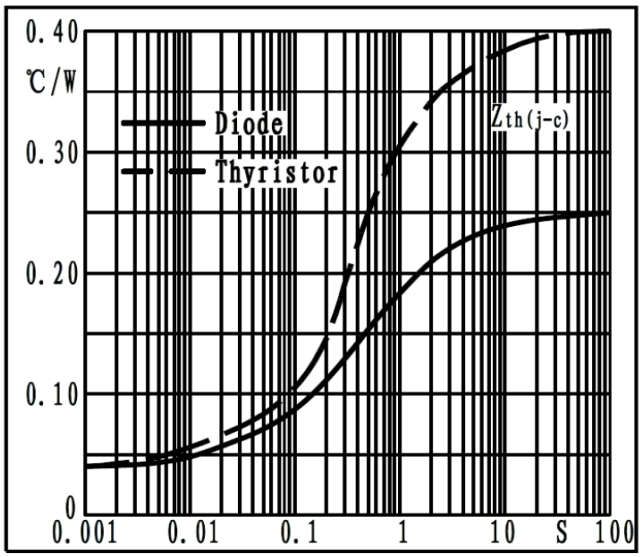


Fig4. Transient thermal impedance

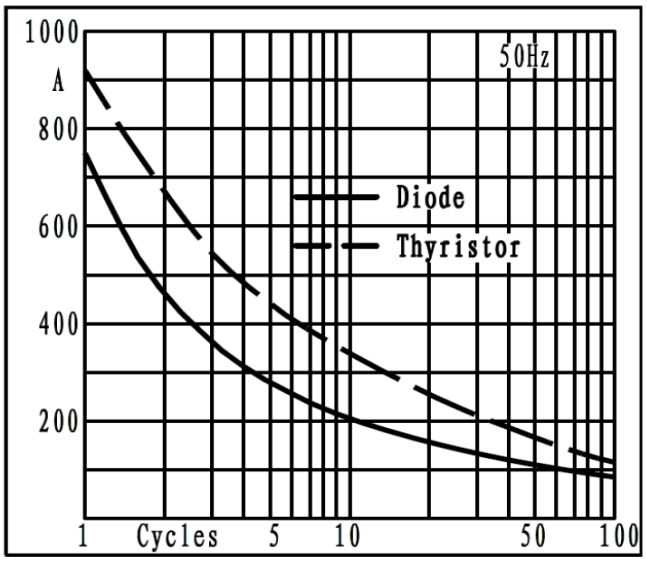


Fig5. Max non-repetitive forward surge current

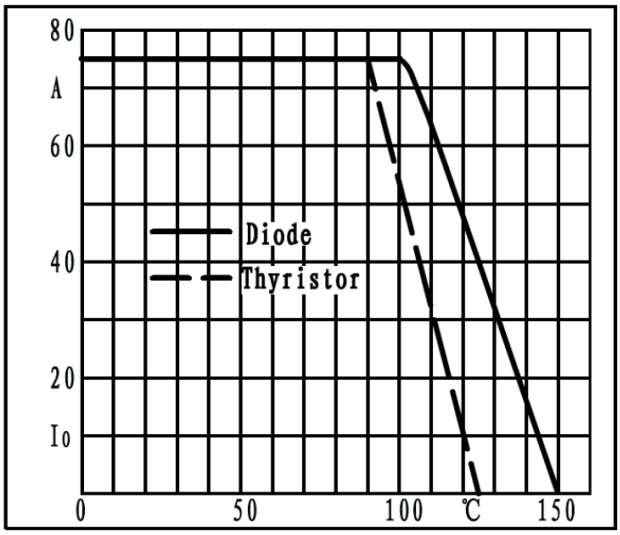
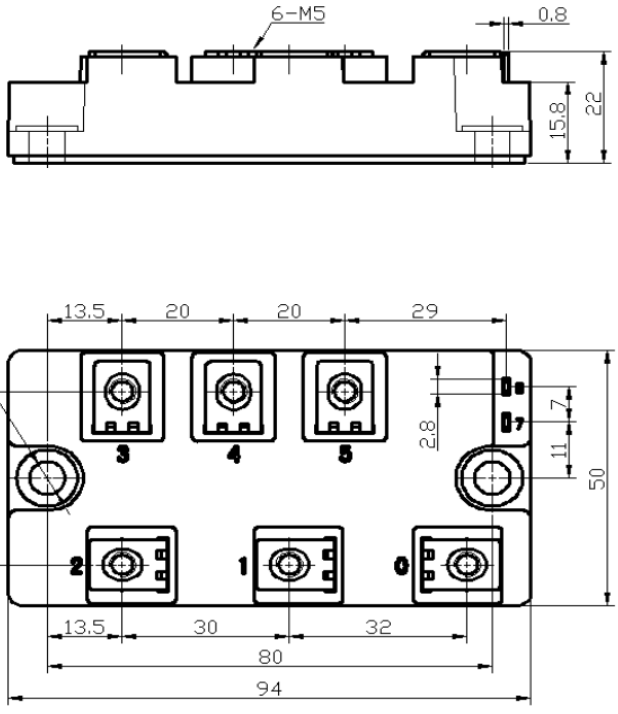


Fig6. Forward current derating curve



Dimensions in mm

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